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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,204	02/24/2004	Kazuhiko Umemura	249369US2	9230
22850	7590	04/06/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			RODEE, CHRISTOPHER D	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/784,204	Applicant(s) UMEMURA ET AL.	
	Examiner Christopher RoDee	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 02 March 2006.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) 14-18 is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-10, 12 and 13 is/are rejected.

7) ☒ Claim(s) 11 is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 5/13/04.

4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I, claims 1-13 in the reply filed on 2 March 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC §§ 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-5, 8, 9, and 13 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ishiyama *et al.* in US Patent 6,558,864.

Ishiyama discloses toners, each comprising a binder resin, a colorant, and a release agent (col. 16, l. 1-12; col. 17, l. 61 – col. 18, l. 13; col. 18, l. 56 – col. 19, l. 9). Toners 6 and 11 have a complex viscosity at 160 °C of 1.04×10^3 Pa·sec and 4.72×10^3 Pa·sec, respectively, and a loss tangent of 0.86 and 0.59, respectively. Both toners have a volume-average particle size of 5.4 µm. The reference teaches that the toner should have a spherical morphology noting the SF1 values disclosed for each toner and the supporting disclosure in column 11, lines 38-49. Effective release agents include waxes, such as rice wax or canauba wax (col. 9, l. 6).

The reference does not specify the viscosity and the loss tangent throughout the temperature range of 140 °C to 170 °C but does show that the viscosity and loss tangent of the toner is within the claimed range at 160 °C which is within the temperature range specified by the claims. Because the toners have the requisite viscosity and loss tangent at 160 °C and these characteristics are related to fixing (col. 12, l. 6-30) and because the reference desires good fixing characteristics at other temperatures (e.g., 180 °C; col. 20, l. 37), there is sufficient reason to believe that the toners also have viscosity and loss tangent values near those of the 160 °C values throughout effective fixing temperatures, such as from 140 °C to 170 °C. Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the toner with the same or similar the viscosity and the loss tangent throughout the temperature range of 140 °C to 170 °C as at 160 °C because this would ensure good fixing properties at various fixing temperatures. Because the toner has the other

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characteristics of the claims, there is sufficient reason to expect that the toner will also have the water contact angle of the claims.

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." *In re Fitzgerald*, 205 USPQ 594, 596 (CCPA 1980).

Claims 1, 2, 4, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Tyagi *et al.* in US Patent 5,462,829.

Tyagi discloses toners containing a polyblend binder resin, a colorant (col. 8, l. 34-59), and a release agent (col. 8, l. 60-63). The toners have fusing temperatures of from 100 °C to 250 °C (col. 9, l. 38-42). Examples 14 and 15 show toners having melt viscosities of 2.63×10^4 and 1.47×10^4 poise (2.63×10^3 and 1.47×10^3 Pa·sec) and loss tangents of 1.74 and 1.64, respectively. The reference also discloses polyester polymers as effective in the polyblend (Abstract; col. 5, l. 38-col. 6, l. 47).

The reference does not specify the viscosity and the loss tangent throughout the temperature range of 140 °C to 170 °C but does show that the viscosity and loss tangent of the toner is within the claimed range at 150 °C which is within the temperature range specified by the claims. Because the toners have the requisite viscosity and loss tangent at 150 °C and these properties are related to the fixing characteristics of the

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toner to various substrates (col. 9, l. 43-55) and because the reference is concerned with the fixing properties at temperatures from 100 °C to 250 °C, there is sufficient reason to believe that the toners also have viscosity and loss tangent values near those of the 150 °C values throughout effective fixing temperatures, such as from 140 °C to 170 °C.

Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the toner with the same or similar the viscosity and the loss tangent throughout the temperature range of 140 °C to 170 °C as at 150 °C because this would ensure good fixing properties at various fixing temperatures.

Because the toner has the other characteristics of the claims, there is sufficient reason to expect that the toner will also have the water contact angle of the claims.

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." *In re Fitzgerald*, 205 USPQ 594, 596 (CCPA 1980).

Claims 1, 2, 4, and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Aslam *et al.* in US Patent 5,234,784.

Aslam discloses a toner having a loss tangent of 1.6 to 8.5 (col. 5, l. 31-47). The toner has a binder resin, a coloring agent, and a release agent (col. 7, l. 49-col. 8, l. 11).

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Example 1 presents a toner having a polyester binder resin and a cyan colorant. The toner has a melt viscosity at 150 °C of 1.07×10^4 poise (1.07×10^3 Pa·sec) and loss tangent of 2.1. The reference is specifically concerned with fixing characteristics in a temperature of below 200 °C (col. 7, l. 38-48), specifically in the range of 100 to 140 °C (col. 10, l. 21).

The reference does not specify the viscosity and the loss tangent throughout the temperature range of 140 °C to 170 °C but does show that the viscosity and loss tangent of the toner is within the claimed range at 150 °C which is within the temperature range specified by the claims. Because the toners have the requisite viscosity and loss tangent at 150 °C and because the reference is concerned with the toner properties at other fixing temperatures within the claimed range (e.g., 140 °C and 200 °C), there is sufficient reason to believe that the toners also have viscosity and loss tangent values near those of the 150 °C values throughout effective fixing temperatures, such as from 140 °C to 170 °C. Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the toner with the same or similar the viscosity and the loss tangent throughout the temperature range of 140 °C to 170 °C as at 150 °C because this would ensure good fixing properties at various fixing temperatures within the disclosed range. Because the toner has the other characteristics of the claims, there is sufficient reason to expect that the toner will also have the water contact angle of the claims.

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his

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[or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." *In re Fitzgerald*, 205 USPQ 594, 596 (CCPA 1980).

Claims 1-4, 10, and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Aslam *et al.* in US Patent 5,254,426.

Aslam discloses a toner having a loss tangent of 1.5 or less (Abstract), typically 0.5 to 1.5 (col. 5, l. 48-51). The toner has a binder resin, a coloring agent, and a release agent (col. 8, l. 8-39). Example 1 presents a toner having a binder resin and a cyan colorant. The toner has a melt viscosity at 150 °C of 2.66×10^5 poise (2.66×10^4 Pa·sec) and loss tangent of 0.7. The reference is specifically concerned with fixing characteristics in a temperature of below 200 °C (col. 7, l. 65-67), such as 100 to 140 °C (col. 9, l. 59). Note the other examples as they are also applicable to the claims. The reference also teaches that crosslinked polymers can be used in combination with other binder resin polymers, such as polyesters

The reference does not specify the viscosity and the loss tangent throughout the temperature range of 140 °C to 170 °C but does show that the viscosity and loss tangent of the toner is within the claimed range at 150 °C which is within the temperature range specified by the claims. Because the toners have the requisite viscosity and loss tangent at 150 °C and because the reference is concerned with the toner properties at other fixing temperatures within the claimed range (e.g., 140 °C and 200 °C), there is sufficient reason to believe that the toners also have viscosity and loss tangent values near those of the 150 °C values throughout effective fixing temperatures, such as from

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140 °C to 170 °C. Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the toner with the same or similar the viscosity and the loss tangent throughout the temperature range of 140 °C to 170 °C as at 150 °C because this would ensure good fixing properties at various fixing temperatures within the disclosed range. Because the toner has the other characteristics of the claims, there is sufficient reason to expect that the toner will also have the water contact angle of the claims.

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." *In re Fitzgerald*, 205 USPQ 594, 596 (CCPA 1980).

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiyama *et al.* in US Patent 6,558,864 over Shigemori *et al.* in US Patent 5,328,792.

Ishiyama was discussed above. The reference does not disclose the ratio of volume-average toner particle diameter (Dv) to number-average toner particle diameter (Dn), but Shigemori does teach that form toner particles having a size of 5 to 15 μm the ratio of Dv/Dn should be 1.0 to 1.40 in order to provide a stable supply of toner over continuous use (col. 5, l. 38-44).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the toner of Ishiyama with a D_v/D_n of 1.00 to 1.40 because Shigemori teaches that this ratio gives a stable supply of toner in continuous use. The artisan would recognize a benefit from the use of these size characteristics in order to improve Ishiyama's toner characteristics.

Allowable Subject Matter

Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CHRISTOPHER RODEE
PRIMARY EXAMINER

cdr
4 April 2006